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NEWS	3	FEB 28	PATDPAFULL - New display fields provide for legal status data from INPADOC
NEWS	4	FEB 28	BABS - Current-awareness alerts (SDIs) available
NEWS	5	MAR 02	GBFULL: New full-text patent database on STN
NEWS	6	MAR 03	REGISTRY/ZREGISTRY - Sequence annotations enhanced
NEWS	7	MAR 03	MEDLINE file segment of TOXCENTER reloaded
NEWS	8	MAR 22	KOREAPAT now updated monthly; patent information enhanced
NEWS	9	MAR 22	Original IDE display format returns to REGISTRY/ZREGISTRY
NEWS	10	MAR 22	PATDPASPC - New patent database available
NEWS	11	MAR 22	REGISTRY/ZREGISTRY enhanced with experimental property tags
NEWS	12	APR 04	EPFULL enhanced with additional patent information and new fields
NEWS	13	APR 04	EMBASE - Database reloaded and enhanced
NEWS	14	APR 18	New CAS Information Use Policies available online
NEWS	15	APR 25	Patent searching, including current-awareness alerts (SDIs), based on application date in CA/CAPLUS and USPATFULL/USPAT2 may be affected by a change in filing date for U.S. applications.
NEWS	16	APR 28	Improved searching of U.S. Patent Classifications for U.S. patent records in CA/CAPLUS
NEWS	17	MAY 23	GBFULL enhanced with patent drawing images
NEWS	18	MAY 23	REGISTRY has been enhanced with source information from CHEMCATS
NEWS	19	JUN 06	The Analysis Edition of STN Express with Discover! (Version 8.0 for Windows) now available
NEWS	20	JUN 13	RUSSIAPAT: New full-text patent database on STN
NEWS	21	JUN 13	FRFULL enhanced with patent drawing images
NEWS	22	JUN 27	MARPAT displays enhanced with expanded G-group definitions and text labels
NEWS	23	JUL 01	MEDICONF removed from STN
NEWS	24	JUL 07	STN Patent Forums to be held in July 2005
NEWS	25	JUL 13	SCISEARCH reloaded
NEWS	26	JUL 20	Powerful new interactive analysis and visualization software, STN AnaVist, now available
NEWS	27	AUG 11	Derwent World Patents Index(R) web-based training during August
NEWS	28	AUG 11	STN AnaVist workshops to be held in North America
NEWS EXPRESS			JUNE 13 CURRENT WINDOWS VERSION IS V8.0, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 13 JUNE 2005
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* * * * * STN Columbus * * * * *

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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

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substance identification.

=> s remov? (3a) nitrogen (l) synthesis gas

1172368 REMOV?
582715 NITROGEN
3620 NITROGENS
585253 NITROGEN
(NITROGEN OR NITROGENS)
1199215 SYNTHESIS
3 SYNTHESISES
64962 SYNTHESSES
1235825 SYNTHESIS
(SYNTHESIS OR SYNTHESISES OR SYNTHESSES)
1446381 GAS
492951 GASES
1622465 GAS
(GAS OR GASES)
15799 SYNTHESIS GAS
(SYNTHESIS(W)GAS)

L1 27 REMOV? (3A) NITROGEN (L) SYNTHESIS GAS

=> s l1 and absorb?

394544 ABSORB?

L2 1 L1 AND ABSORB?

=> d l2 ibib ab

L2 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1986:575296 CAPLUS
DOCUMENT NUMBER: 105:175296
TITLE: Synthesis gas
INVENTOR(S): Pinto, Alwyn
PATENT ASSIGNEE(S): Imperial Chemical Industries PLC, UK
SOURCE: Eur. Pat. Appl., 27 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 194765	A2	19860917	EP 1986-301124	19860218
EP 194765	A3	19880810		
EP 194765	B1	19910508		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
AT 63294	E	19910515	AT 1986-301124	19860218
NO 8600665	A	19860909	NO 1986-665	19860221
US 4671893	A	19870609	US 1986-832423	19860224
IN 166251	A	19900331	IN 1986-DE152	19860224
ZA 8601413	A	19861230	ZA 1986-1413	19860225
AU 8654191	A1	19860911	AU 1986-54191	19860228
AU 576669	B2	19880901		
JP 61236894	A2	19861022	JP 1986-50243	19860307
CA 1249723	A1	19890207	CA 1986-503614	19860307
PRIORITY APPLN. INFO.:			GB 1985-6011	A 19850308
			GB 1985-28854	A 19851122

AB CO₂ is removed by a wet absorption process from raw synthesis gas, e.g., from reformed natural gas, containing H₂, CO₂, and intermediate-boiling gas, e.g., N₂, and the CO₂-loaded absorbent liquid is stripped of CO₂ and recycled. At least part of the intermediate-boiling gas is removed by pressure-swing adsorption (PSA), and the resulting waste gas may be used for stripping the CO₂ absorbent. In one embodiment, a raw gas stream with a (H₂ + CO):N₂ mol ratio of 2.0-2.7 is adjusted to a H₂:N₂ mol ratio of 2.7-3.0, i.e., NH₃ synthesis gas, by catalytic shifting to convert CO to CO₂, which is removed as above, and removal of some of the N₂ by PSA. Thus, a raw gas stream at 28.6 bar absolute, containing H₂ 4073.2, N₂ 1709.9, CO₂ 1244.0, CO 28.9, CH₄ 201.6, and Ar 20.1 kgmol/h, i.e., (H₂ + CO) = 2.4, was treated to give a stream containing H₂ 3828.8, N₂ 1276.3, CO₂ 0, CO 0.5, CH₄ 1.0, and Ar 16.1 kgmol/h, i.e., H₂:N₂ = 3.0.

```
=> s wash? (3a) synthesis gas
    422309 WASH?
    1199215 SYNTHESIS
      3 SYNTHESISES
    64962 SYNTHESES
    1235825 SYNTHESIS
      (SYNTHESIS OR SYNTHESISES OR SYNTHESES)
    1446381 GAS
    492951 GASES
    1622465 GAS
      (GAS OR GASES)
    15799 SYNTHESIS GAS
      (SYNTHESIS(W)GAS)
```

```
L3      60 WASH? (3A) SYNTHESIS GAS
```

```
=> s l3 and nitrogen
    582715 NITROGEN
    3620 NITROGENS
    585253 NITROGEN
      (NITROGEN OR NITROGENS)
```

```
L4      9 L3 AND NITROGEN
```

```
=> s l4 not l2
```

```
L5      9 L4 NOT L2
```

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=> d l5 ibib ab 1-9
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L5 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1985:562740 CAPLUS

DOCUMENT NUMBER: 103:162740

TITLE: Distributing the recycles and condensates in washing synthesis gas for ammonia with liquid nitrogen

INVENTOR(S): Vins, Ludek; Vins, Martin

PATENT ASSIGNEE(S): Czech.

SOURCE: Czech., 5 pp.
CODEN: CZXXA9

DOCUMENT TYPE: Patent

LANGUAGE: Czech

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
CS 218406	B	19830225	CS 1981-3259	19810504
PRIORITY APPLN. INFO.:			CS 1981-3259	19810504
AB The apparatus is used for preparation of a H ₂ -N ₂ (3:1) mixture for NH ₃ synthesis from				

generator gas containing 0.2-12% CH₄. Liquid N₂ is circulated through the H₂-N₂ mixture cooling the inlet generator gas. A CH₄-condensate from the cooler is mixed with the waste gas from a washing column for the inlet gas. The method provides a constant temperature gradient in the inlet gas cooler for a wide range of CH₄ concentration

L5 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1984:429916 CAPLUS
DOCUMENT NUMBER: 101:29916
TITLE: Purification and trace level determination of carbon dioxide in synthesis gas
AUTHOR(S): Goomer, N. C.; Awasthi, S. P.; Dave, S. M.
CORPORATE SOURCE: Anal. Chem. Div., BARC, Bombay, 400085, India
SOURCE: Trace Anal. Technol. Dev., Spec. Contrib. Pap. Int. Symp., 1st (1983), Meeting Date 1981, 376-9.
Editor(s): Sankar, Das M. Wiley: New York, N. Y.
CODEN: 51QYAK
DOCUMENT TYPE: Conference
LANGUAGE: English

AB The CO₂ impurity in the synthesis gas (N₂ + 3H₂), which is used as feed material in the NH₃-H exchange process for the production of heavy water, is reduced to <1 ppm by the K amide-liquid NH₃ solution wash step before the gas is fed into the exchange column.

L5 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1976:562608 CAPLUS
DOCUMENT NUMBER: 85:162608
TITLE: Modern liquid-nitrogen wash process for the final purification of ammonia synthesis gas at high pressures
AUTHOR(S): Fabian, Rainer; Foerg, Wolfgang
CORPORATE SOURCE: Holtrriegelskreuth, Fed. Rep. Ger.
SOURCE: Chemical Age of India (1976), 27(6), 515-20
CODEN: CHAIAT; ISSN: 0009-2320
DOCUMENT TYPE: Journal
LANGUAGE: English

AB H is obtained by gasification of heavy oil or coal, the product is purified by removing mech. impurities like soot, the gas is compressed; the residual CO is converted into H and CO₂ by means of steam, and the acid gases (H₂S, COS, and CO₂) are removed in a wash process with MeOH at 215-220° K and 40-80 bars. When the H has been finally purified by removing CO₂ and MeOH in mol.-sieve adsorbers, the synthesis mixture is produced in the liquid-N wash unit.

L5 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1970:522049 CAPLUS
DOCUMENT NUMBER: 73:122049
TITLE: Removal of carbon dioxide from synthesis gas
INVENTOR(S): Konoki, Keizo; Ohsaki, Kozo
PATENT ASSIGNEE(S): Toyo Engineering Corp.; Mitsui Toatsu Chemicals Co., Ltd.
SOURCE: Ger. Offen., 22 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2005258	A	19700903	DE 1970-2005258	19700205
DE 2005258	B2	19801204		

JP 48030258	B4	19730918	JP 1969-9581	19690208
FR 2034012	A5	19701204	FR 1970-4204	19700206
US 3684442	A	19720815	US 1970-9148	19700206
GB 1302593	A	19730110	GB 1970-5790	19700206

PRIORITY APPLN. INFO.: JP 1969-9581 A 19690208

AB CO₂ in crude synthesis gas used for NH₃ production in combination with a urea process is removed in a wash zone into which is fed a medium enhancing dissoln. of NH₄ carbamate and liquid NH₃ at such a rate that the molar ratio of NH₃:CO₂ in the wash solution NH₃ at such a rate that the molar ratio of NH₃:CO₂ in the wash solution at the gas outlet end of the wash zone is maintained at least at 4.0:1 to 20.0:1. The CO₂ is almost completely taken up by the liquid phase, whereby the synthesis gas is passed through the wash zone without any undesirable cooling by indirect heat exchange. Some water or aqueous solution can then be added for complete CO₂ removal or CO₂ can be converted into CH₄. Liquid NH₃ can be condensed from the gas phase and separated prior to the CH₄ conversion. Part of the heat of the synthesis gas can now be transferred to cycling gas in an NH₃ reactor, or the CO₂-free synthesis gas can be compressed with freshly purified synthesis gas.

L5 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1969:98275 CAPLUS
 DOCUMENT NUMBER: 70:98275
 TITLE: Washing apparatus for liquid nitrogen
 AUTHOR(S): Joly, Albert
 CORPORATE SOURCE: Soc. Air Liquide, Champigny, Fr.
 SOURCE: Industrie Chimique Belge (1967), 32 (Spec. No.) (Pt. 2), 389-90
 CODEN: ICBEAJ; ISSN: 0019-9052
 DOCUMENT TYPE: Journal
 LANGUAGE: French

AB In NH₃ synthesis, H₂ can be purified from CO to <5 ppm. CO by washing the gas containing initially 35-95% H₂ by passing it through liquid N₂. The equilibrium coeffs. for the H₂-N₂-CO and the relative volatility of N₂ to CO were measured at 40-150 atmospheric. The relative volatility N₂ to CO increased at constant pressure with decreasing CO content in the vapor phase and did not notably decrease at rising pressure with constant CO concentration in the liquid phase. This proved that CO separation by washing of the gas in liquid N₂ was feasible with a limited number of plates even at high pressure. A pilot column was built and the expts. demonstrated that washing in liquid N₂ was possible at much higher pressure than the critical pressure of the constituents of the gas mixture. Up to 150 atmospheric, the CO content of the head mixture of column can easily be maintained below 5 ppm. The large number of tests excluded error in measuring. Losses of H₂ in the column residues remained small even at high pressure. Column technology is analyzed. A unit with a capacity of 450 tons NH₃/day and operating at 75 atmospheric has been successfully operated.

L5 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1968:444898 CAPLUS
 DOCUMENT NUMBER: 69:44898
 TITLE: Elimination of nitrogen oxides from the gases from ammonia synthesis
 INVENTOR(S): Constantinescu, Mircea; Platon, Eugenia; Tibrea, Olga
 PATENT ASSIGNEE(S): Romania, Ministry of the Chemical Industry
 SOURCE: Rom., 2 pp.
 CODEN: RUXXA3
 DOCUMENT TYPE: Patent
 LANGUAGE: Romanian
 FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RO 50557		19680226	RO	19670318

AB Na₂Cr₂O₇ added to the synthesis-gas washing liquid simultaneously eliminates N oxides and CO₂. A reduction of the corrosion by the O contained in gases and washing liquid is claimed.

L5 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1962:74537 CAPLUS

DOCUMENT NUMBER: 56:74537

ORIGINAL REFERENCE NO.: 56:14548h-i

TITLE: Apparatus for producing ammonia synthesis gases from coke-oven gas

PATENT ASSIGNEE(S): Stamicarbon N.V.

DOCUMENT TYPE: Patent

LANGUAGE: Unavailable

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
NL 99841		19611215	NL	19550407

AB Coke-oven gas is cooled to remove the low-volatile constituents and is then washed countercurrently with liquid N in 2 columns, between which a condenser is placed to cool the gases. In this condenser, liquid N is boiling under a pressure slightly higher than atmospheric The CO content of the synthesis gas after washing is very low.

L5 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1960:83143 CAPLUS

DOCUMENT NUMBER: 54:83143

ORIGINAL REFERENCE NO.: 54:15860a-c

TITLE: Washing out of carbon monoxide by means of liquid nitrogen

AUTHOR(S): Gel'perin, I. I.; Rapoport, L. L.

SOURCE: Trudy Gosudarst. Nauch.-Issledovatel. i Proekt. Inst. Azot. Prom. (1956), (No. 5), 249-60
From: Referat. Zhur., Khim. 1958, Abstr. No. 5217.

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB cf. CA 54, 12508i. An analysis of available data is given regarding phase equilibrium in the system H-N. The possibility is discussed regarding the application of these data for the calcn. of the washing out of CO from the concentrated NH₃-synthesis gas by means of liquid N. Diagrams are introduced showing the equilibrium compns. for mixts. of H-N-CO at temps. of 78, 83, and 90°K. and pressures of 12, 20, and 26 atmospheric These diagrams can be employed with sufficient accuracy for the calcn. of processes in the scrubbing column, since the resp. temps. are considerably lower than the critical temperature for CH₄. Data are given for the calcn. of the amount of liquid

N required for the washing out of CO in relation to the composition of the initial converted gas as well as to the block diagram of washing out with liquid N.

L5 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1960:32309 CAPLUS

DOCUMENT NUMBER: 54:32309

ORIGINAL REFERENCE NO.: 54:6259e-i

TITLE: Absorption of gases in liquids at high pressures

AUTHOR(S): Balla, Bela; Kincses, Gyula

CORPORATE SOURCE: Nehezvegyipari Kutato Intezet, Veszprem, Hung.
SOURCE: Nehezvegyipari Kutato Intezet Kozlemenyei (1959), 1,
207-12
CODEN: NEKUAB; ISSN: 0505-3919

DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB A method was developed for determining the solubility of gases in liquids at high

pressures. The liquid was placed in a steel bomb having an aperture connected to a manometer, safety valve, and gas feeding pipe and an aperture for a high-pressure needle-valve. The bomb was contained in a thermostatically controlled bath. The amount of dissolved gas was determined with a gas buret. The solubility of H and N in water (determined up to 50

atmospheric

pressure) corresponded to the data given by Wiebe and Gaddy (C.A. 28, 12478). The solubilities of CO, H, and N were determined in ammoniacal cuprous carbonate and formate, resp., solns. of identical Cu content at pressures corresponding to those of NH₃ synthesis. The carbonate solution absorbed higher amts. of all 3 gases than did the formate solution; however, when the free NH₃ content of the solns. also was identical, the difference in solubility was insignificant. This indicated that (at the industrially important 3.5-4.0 atmospheric partial pressure range) the formate can be replaced by the cheaper carbonate without redesigning the absorption columns designed for the former, although this advantage is diminished by the higher steam requirement for the regeneration of the carbonate owing to its endothermic decomposition. The removal of the approx. 28-30% CO₂ content of synthesis gas by washing with water in a tower

filled with Raschig rings at 12-13 atmospheric pressure was studied in industrial

equipment. The washing water leaving the tower was saturated in N, CH₄, H, and CO (gases of low solubility in water) and 70% saturated in CO₂.